CLAIMS:

1. An image sensor unit having an electric discharge light emitting lamp for producing an illumination beam, the lamp comprising a first electrode and a second electrode facing each other and defining a discharge space therebetween along the longitudinal axis of the lamp, wherein:

a first light emitting layer and a second light emitting layer are provided in the discharge space so as to face each other and to cover the first and second electrodes, respectively;

a dielectric material is inserted between the first electrode and the first light emitting layer, and between the second electrode and the second light emitting layer; and

at least one of the first and second light emitting layers is arranged so as to define an uncovered region, in which at least one of the dielectric material, the first electrode, and the second electrode is exposed to the discharge space.

2. The image sensor unit according to claim 1, wherein the uncovered region extends from one end of the lamp continuously or discontinuously along the longitudinal axis of the lamp.

3. The image sensor unit according to claim 1 or 2, wherein the uncovered region is arranged outside the scanning area of the image sensor unit.

4. The image sensor unit according to claim 1 or 2, wherein a photoemission material is contained in the uncovered region.

5. The image sensor unit according to claim 4, wherein if the dielectric material is exposed to the

discharge space in the uncovered region, a photoemission material is contained in the exposed portion of the dielectric material.

6. The image sensor unit according to claim 4, wherein if the first or second electrode is exposed to the discharge space in the uncovered region, a photoemission material is contained in the exposed portion of the first or second electrode.

7. The image sensor unit according to claim 1 or 2, further comprising an external light source configured to irradiate the uncovered region of the lamp.

8. The image sensor unit according to claim 1 or 2,

wherein the lamp further comprises a lamp body consisting of a first part and a second part that are combined together and sealed up to form the discharge space between the first and second electrodes, wherein at least one of the first and second parts is transparent to light and made of said dielectric material.

9. The image sensor unit according to claim 8, wherein the first electrode is formed on an inner face of the first part, and the second electrode is formed on an outer face of the second part so as to be parallel to the first electrode.

10. The image sensor unit according to claim 9, wherein the first light emitting layer is formed above the first electrode via an insulating layer made of said dielectric material, and at least one of the insulating layer and the first electrode is

exposed to the discharge space in the uncovered region.

11. The image sensor unit according to claim 9, wherein the second light emitting layer is formed on an inner face of the second part so as to define said uncovered region, the second part is made of said dielectric material, and a portion of the dielectric material of the second part is exposed to the discharge space in the uncovered region.

12. The image sensor unit according to claim 1 or 2, wherein the uncovered regions are arranged in the first and second light emitting layers, and face each other across the discharge space.